

**Capability of Public and Private Healthcare Workers in Kep and Healthcare
Worker's Attitude to Public and Private Healthcare systems**

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1. Abstract

Previous studies have shown that patients preferred to use the private healthcare system rather than the public healthcare system in Kep, Cambodia. This was speculated to be due to the long distance to a public health center or hospital and due to the belief that private healthcare workers are more skillful than public healthcare workers. However, there is no evidence of private healthcare workers providing equal, superior or inferior care compared to that of the public healthcare workers. This study aimed to ascertain the capability of healthcare workers in both the private and public settings by measuring the training of healthcare workers and the resources available at their healthcare facilities. In addition, healthcare workers attitudes to private and public healthcare systems were also studied. These were done by individual interviews and by focus groups with health care workers in Kep.

The results showed that both private and public healthcare workers had similar formal training, however public clinicians attended greater short-term continuing education courses on health issues relevant to Cambodians. Equipment that were lacking in both private and public systems were electricity, electronic machines and laboratory service. Most clinicians had stethoscopes and blood pressure cuffs, but only the public referral hospital had laboratory services. Public health centers and referral hospital lacked a designated phone number for patients to call, whereas private clinicians had cellular phones where patients could reach them. In addition, the hours of operation of the public health facilities were not agreed upon by public healthcare workers, whereas private health facilities were open for almost 24hours.

Issues that must be resolved in order to have a more efficient public health system in Kep are improving transportation services to and from the health center for both staff and patients, providing electricity at the public health centers, and providing incentives for public healthcare workers to work for longer hours.

2. Introduction

2.1 Cambodia Background

Cambodia is located in Southeast Asia, in the Southern part of Indochina. It is bordered by Lao, Vietnam, and Thailand. Cambodia has the lowest per Capita GDP, at US\$357, in the ASEAN region (Save Cambodia, 2006). However, the annual real GDP has been growing at an average of 6.9% between 1994 and 2004 (Save Cambodia, 2006). The major contributors to Cambodia's GDP include 30.9% from agriculture, fishers and forestry sectors, 28.9% from industry, and 34.4% from services in 2004 (Save Cambodia, 2006).

There are 20 provinces and 4 municipalities. Each province is divided into districts, which are further subdivided into communes. Communes are subdivided into villages. The commune council is important for natural resource management – they determine the land's suitability and assess the resources in order to plan how to use the land (Save Cambodia, 2006).

The life expectancy, in Cambodia, is 54.4 years (Save Cambodia, 2006). Primary school enrollment is 91.9% which drops to 26.1% for lower secondary enrollment and 9.3% for upper secondary enrollment. The literacy rate (15-44) is 79%. (quoted in Save Cambodia, 2006 from NIS Statistical book 2005, CDHS, 2000, State of Environment Report 2004).

2.2 Kep Background

Kep is a municipality with 5 commune and 16 villages. The population is between 35000-40,000. Primary education is free, but lower and higher secondary school costs 15,000 Riel/year. Electricity has been available in Kep since June 2007. However, electricity is not reliable and does not reach all households, especially if their houses are not off of the main road; therefore, many households use generators to power all electronics during the evening or have no electricity at all.

2.3 Kep's Healthcare Problems

Developing and developed countries have debated over the advantages and disadvantages of private and public healthcare systems. In Kep, there are several healthcare providers whom villagers can receive medical treatment from: the three government sponsored health centers, the government funded referral hospital, private pharmacies and doctors, and traditional healers (Bowles, 2005).

Bowles noted that a greater number of people chose to go to a pharmacy or private doctor rather than the health center or hospital for some serious conditions: fever and strong fever, "serious problems," and typhoid. Although private doctors and pharmacies are often closer to the patients, they are not regulated; and thus, the efficacy of the treatment provided may be called into question. In addition, their services cost more than the government funded health centers. There is a 1000 riel service charge (25 cents USD) for each issue that you go to the health center for. In addition to being cheaper when compared to the pharmacies and private doctors, upon return to the health center for follow-up, there will be no charge. At the pharmacies and private doctors, there will be a charge for follow-up or for more medication (Bowles, 2005). In many cases, pharmacies and private doctors may purposely give fewer than necessary medications and find other ways to force patients to return and give more money. The cost for treatment at the pharmacies and private doctors is unknown (Bowles, 2005).

It is also important to note that in addition to the great distance from the health centers, health centers are usually bypassed because of limited hours of service and staff present, lack of equipment and medication and, dissatisfaction with the treatment disbursed (Skalenda, 2004). Generally, pharmacies and private doctors are open 24 hours a day compared to the health centers which have variable hours but usually opens from 7am to 4 pm (Bowles, 2005). In addition, some health centers lack basic equipment such as electricity and running water (Skalenda, 2004). Bowles also noted that patients view health center workers as less skillful than pharmacists or private doctors. Their views did not change even if the same health center worker also worked as a pharmacist or private doctor.

2.4 Objective of Present Study

Although both Skalenda and Bowles have done some preliminary research on the education and training of those who work in health centers and the referral hospital and those who work as private doctors, a more detailed comparison between public and private healthcare providers was needed to ensure that the quality of care provided to Kep citizens is sufficient.

This project assessed the capabilities to successfully treat patients of both private and public healthcare workers. In this study, the true “capability” of workers was measured by the level of training of workers and resources available at the facilities were used as indicators of capability. This study also looked at the opinions of healthcare workers on private and public healthcare, and what they believed that Kep’s healthcare system needs.

There were three main objectives of this project:

1. To determine the types of training health workers have, in both the private and public settings, including certified educational programs, short educational courses (ex. Tuberculosis, malaria) and relevant work experience
2. To determine the types of resources available at the health centers, referral hospital and private clinics
3. To determine all health workers attitudes towards the private and public healthcare system

3. Methods

3.1 Individual Interviews

3.1a Recruitment

Healthcare workers in the public health centers (Angkoul Health Center, Okrasa Health Center and Pong Teuk Health Center) or referral hospital were recruited if they were present at the facility and were interested in participating when the investigator and her translator went to each of the public health facility during their hours of operation. The interviews were performed at the health center or referral hospital, either in a corner of the waiting area or in a private room.

Recruitment of healthcare workers in the private clinics was performed by going to each commune and asking villagers where there was a private doctor. These private clinicians were asked to participate in the study by visiting their clinics, which was often their home either on a farm or in a shop on the main road, and the interviews were performed at that location.

In both cases, the translator explained the contents of the consent form found in Appendix D and asked for verbal consent.

3.1b Survey

Contents of the survey were explained via the translator at the beginning of the project. The translator asked the questions to the participant in Khmer. He then translated the participant’s answer from Khmer to English. The English-speaking investigator wrote down the answers in English. In addition, the translator signed the confidentiality agreement found in Appendix F.

There were two different surveys that were completed. Worker Information survey, found in Appendix A, was completed by each participant. It contained questions on the worker’s general information, their formal and informal training, and their attitudes to the private and public healthcare systems. This survey took approximately 30 minutes to complete.

With exception to Okrasa Health Center, Healthcare Facility Information survey, found in Appendix B, was completed by the first 3 participants at each public health facility who were interviewed. Multiple participants were used to make sure that there was reliability and consistency in their answers. One of the three participants had to be the director of the healthcare facility. At Okrasa Health Center, only one staff member completed the Healthcare Facility Information survey due to a lack of compliance by other healthcare members. This survey was given to only one person in the private clinics, since private clinics were normally run by one

person. The Healthcare Facility Information survey asked questions on basic resources, like having a phone number and a toilet; medical resources, like the number of stethoscopes and operating kits; and the cost for each type of service, like getting an injection. This survey took approximately 20 minutes to complete.

3.1c Compensation

All participants were given a bar of soap or a toothbrush after finishing the survey.

3.2 Focus Groups (Group Interviews)

3.2a Recruitment

Two separate focus groups were held at the end of the study. They were held at 2 of the 4 public health facilities, which were picked randomly. The director of the health facility was called and was asked to recruit as many members of their healthcare facility to join. The translator explained the contents of the consent form found in Appendix E and asked for verbal consent.

3.2b Questions

After the individual interviews were completed, data from the individual interviews were crudely analyzed. Questions, which were derived from the analysis, were asked to 2 separate focus groups. Questions can found in Appendix C. The focus groups took approximately an hour in length.

3.2c Delbecq Technique

The Delbecq Technique was used in running the focus group. A question was posed to the participants in the beginning of the session, and they were given 5 minutes to write their responses individually. After 5 minutes, each person shared what they had written down and commented on each other responses. After the completion of the first question, the rest of the questions were posed in the same way.

3.2d Compensation

Each participant of the Focus Group was given \$2 USD for their participation.

4. Results

4.1 General Data

The total number of subjects interviewed individually was 27. General information about the subjects is shown in Table 1. The proportion of individuals who worked in both private and public clinics was 44%, private only clinics was 33%, and public only clinics was 22%; this is depicted in Figure 1.

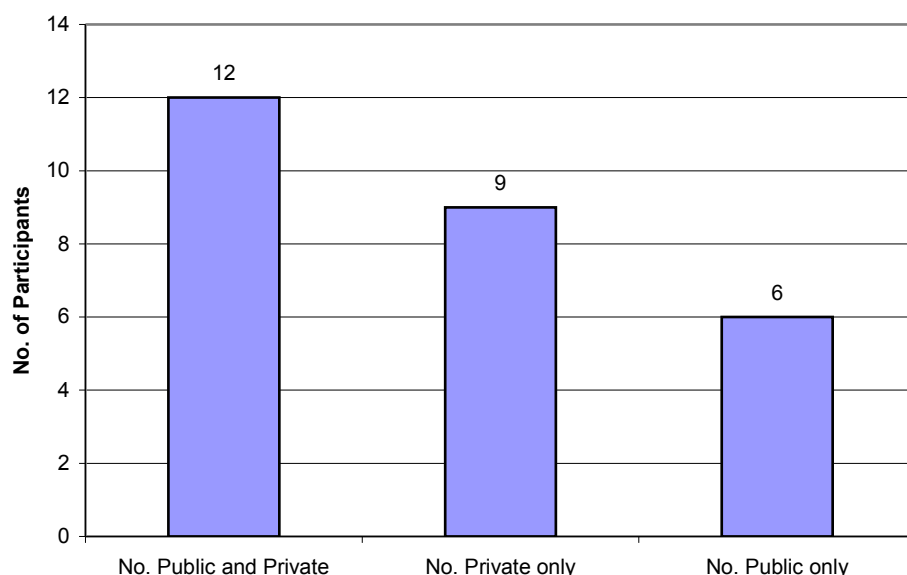


Figure 1: Healthcare Worker Distribution in Public and Private Healthcare System

Those who worked in the public healthcare system included Army doctors and Operational District officers, which is in addition to the staff at the referral hospital and health center. Of all of the healthcare workers who worked only in the private system, all of them had worked in the public healthcare system previously as either Army doctors or health center staff in Kep or other provinces.

Total Number of Subjects	27
Number of Subjects Working in Both Private and Public Healthcare System	12
Number of Subjects Working in Private Healthcare System Only	9
Number of Subjects Working in Public Healthcare System Only	6
Average Age of Subjects	42 years old
Age Range of Participants	24-59 years old
Male to Female Ratio	18:9

Table 1: General Information

4.2 Occupational Titles

Healthcare workers were asked what they believed were their occupational titles. Most participants were vague in their answers. They tried to explain their occupational titles by describing what they do at work, and not by the education that they had. For example, one woman called herself a Vaccinator, a person who does vaccines, despite having been trained as being a nurse. In addition, since most people had multiple occupational responsibilities, they also had multiple titles like secondary nurse and midwife, or administration assistant and pharmacist, or veterinarian and nurse. The following is a list of the different occupational titles:

- Midwife
- Administration Assistant
- Vaccinator
- Doctor
- Director of Health Center
- Deputy
- X Ray controller
- Consulter (TB, Child/mother care)
- Primary and Secondary Nurse
- Pharmacist

4.3 Education

All healthcare workers received some form of training for their occupation either through formal schooling or through experience. However, unlike how educational programs are structured in developed countries, where there are specific requirements that must be achieved in order to attain a certificate or degree despite different colleges or schools, it was not apparent that Cambodia's structure of educating their health workers is uniform. For example, in general nurses attended a school for 3-4 years to get their degree, but one participant claimed that she is a primary nurse but had only studied for 6 months. This confusion, however, may have been due to her duties corresponding to her occupational title - a Primary nurse. Another issue about education involves those who were trained during the Lon Nol Regime or Khmer Rouge Regime; their education was fragmented because political instability did not allow them to be continuously educated.

4.4 Continuing Education

Healthcare workers in the public system were given more opportunities to attend short courses ranging from 2 days to 1 week on specific health topics. Those who work in the private clinic only were generally not invited to these courses. The following is a list of the different courses that participants took:

- | | | |
|-----------------|---------------------|--------------------------|
| • Tuberculosis | • Nutrition | • Bird flu |
| • Malaria | • Management | • Vaccination |
| • Dengue | • Health Promotion | • Iodine Supplementation |
| • Birth Spacing | • Health Education | • Iron Supplementation |
| • STD | • Leprosy | • Maternal Health |
| • HIV/AIDS | • Internet training | |

4.5 Resources

In general, resources at both private and public health facilities were seriously lacking. There were no examination tables or operating tables, only beds that served as examination or operating tables. Fluorescent lamps were used instead of examination lamps; that is, only if the facility had electricity. All sampled clinics used single use syringes rather than glass reusable syringes. Hepatitis testing, liver function testing and electrocardiograms were not available in any of the health facilities in Kep. There were also no vision charts or dental chairs found in the healthcare facilities.

Health centers were not equipped with electricity, thus anything powered by electricity from lamps to higher technological gadgets like X rays were not available at the health centers. The health centers did not have a designated phone number, but patients could call individual staff members via their cell phones. The refrigerator to store vaccines was a gas type fridge, and its' temperature was somewhere between 0-8 deg Celsius. The health centers were not equipped with otoscopes, but they did have stethoscopes, sphygmomanometers, and private rooms.

The referral hospital was the only facility in Kep equipped with its own laboratory, as well as electronic devices such as an ultrasound diagnostic machine, an X ray machine, and an autoclave. Like the health centers, the referral hospital did not have a designated phone number. They also offered psychiatric services which were not available elsewhere.

Equipment in private clinics varied. Most of them had stethoscopes, sphygmomanometers and a phone number for patients to call for them. However, none of them had their own laboratories or private rooms since the clinician's home was often their office.

Table 2 shows the distribution of general equipment, medical equipment and electronic equipment in health centers, the referral hospital and the percentage of private clinics that had the equipment.

	Health Centers	Referral Hospital	Percent of Private Clinics that have equipment*
General			
Computer	N	Y	11%
Designated Phone Number	N	N	79%
Laboratories	N	Y	0
Private Rooms	Y	Y	0
Refridgerator/Freezer	Y	Y	0
Toilet	Y	Y	74%
Medical Equipment			
Examination Table	N	N	0
General Operating Table	N	N	0
Stethoscope	Y	Y	95%
Sphygmomanometer	Y	Y	100%
Scale	Y	Y	53%
Vision Chart	N	N	0
Dental Chair	N	N	0
Operating Kit	Y	Y	84%
Otoscope	N	Y	21%
Electronic Equipment			
X Ray Machine	N	Y	0
Electrocardiogram	N	N	0
Ultrasound diagnostic machine	N	Y	0
Autoclave	N	Y	0

Table 2: Type of Equipment (General, Medical and Electronic) Available at Healthcare Facilities

* Not all private clinics had this equipment, Y = Yes, N = No

4.6 Costs for Services

The costs for services in the public (health center and referral hospital) and private clinics (and the percent of private clinics who offered the service) are showed in Table 3.

For the most part, costs for specific services were consistent between all the health centers and within each health center. The public health centers charged 1000R (25 cents USD) for all patients. This cost included a basic health exam, medication and oral rehydration salts (if needed). Injection fee was 1000R and was only done for birth spacing (Depro-Provera), but injections were free for vaccination of infants. Sputum tests from the health centers were sent to the hospital laboratory. In general, the cost for services was less than the private clinics.

The fee for the hospital was calculated differently than other healthcare facilities. They had a bed fee of 30,000 Riels/week (\$7.5 USD) which includes all needed medication. If the patient was not an inpatient, then charges were similar to the health centers.

In general, private clinics charged more than the public healthcare facilities. Private health facilities which provided laboratory test services brought their samples to Kampot Province laboratories for testing, but they charged more than the referral hospital. Private clinics also had a large range in their prices, which are shown by the standard deviations or price ranges in Table 3.

	Health Centers	Referral Hospital	Private Clinics	Percent of Private Clinics that Offer service
General				
Basic Health Check Up	1000	0	0	
TB Treatment	0	0	500-1000	5%
Directly Observed Therapy Short Course	0	0	N/A	N/A
Injection	1000	0	5100 ± 2800	100%
Stitches	5000	5000	6900 ± 9000	79%
Oral Rehydration Salts	0	0	230 ± 160	74%
Bed (Overnight)	N/A	30,000	150,000 – 400, 000	5%
Realign Bone and Dress Wounds	N/A	0	N/A	N/A
Lab Tests:				
Sputum	0	0	N/A	N/A
Blood	N/A	3000-5000	9800 ± 3800	21%
Urine	2200	1500-2000	3100 ± 1400	37%
Stool	N/A	1000	15000 ± 15000	11%
Hepatitis	N/A	N/A	N/A	N/A
Liver Function	N/A	N/A	N/A	N/A
Electronic Tests:				
Ultrasound (ECHO)	N/A	10,000	N/A	N/A
Electrocardiogram	N/A	N/A	N/A	N/A
X Ray	N/A	15, 000	N/A	N/A

Table 3: Average Costs For Services (Riels)

* Not all private clinics offered these services, but the average cost of the private clinics that did offer this service was calculated; 4000 Riels = 1 USD

4.7 Hours of Operation

The major concern with results from Healthcare Facility survey was the inconsistency in the answers of some of the questions between health staff in the same health center. The most observant discrepancy was the hours of operation, which ranged from 3.5 hours to 8 hours. In addition, when asked what the operating hours of the health center were, there were differing responses of the times that it opened (ranged between 7am and

8:30am) and when it closed (ranged between 11am and 5 pm). In addition, the investigator had dropped in at times when the health center was supposed to open, only to find that no staff was present.

The referral hospital claimed to be open 24 hours, although most staff were only present during the morning hours and 1-2 staff members stayed for the rest of the day.

The private health workers were generally available for 24 hours, 7 days of the week. This was the case unless they also worked at the public healthcare system, in which case they were not available during the times that they spent in the public health centers. Two participants said that their hours of operation were 2-4 hours, but one was a retired health center staff and another had another full time government job.

4.8 Sterilization Methods

Each health center used a different sterilization method. One health center used alcohol to sterilize their equipment. Another health center used alcohol and boiling water. The last health center claimed that it sent their equipment to the hospital to be sterilized with an autoclave.

The referral hospital used an autoclave to sterilize their equipment.

As shown in the pie chart in Figure 2, 47% of private clinics used boiling and another 47% used alcohol only to sterilize their equipment. Only one person sent their equipment to the referral hospital for sterilization, and this individual also worked at a public health center.

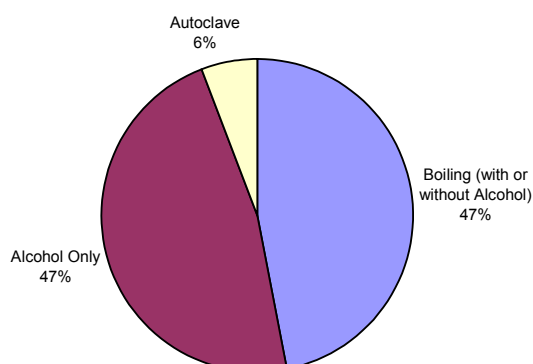


Figure 2: Distribution of Sterilization Methods in Private Clinics

4.9 Salaries

Participants were asked what their current salaries were during personal interviews (in both public and private settings, and what their desired salaries were during the focus groups (in only the public setting). As shown in Table 4, there is large discrepancy between their current and desired salaries. In addition, there are large ranges and standard deviations in both the current and desired salaries.

	Current Public (\$)	Current Private(\$)	Desired Public (\$)
Range	13.75-70	25-650	75-1000
Average	32.26	153.46	393.18
Standard Deviation	20.48	155.28	348.04

Table 4: Current and Desired Salaries in USD

4.10 Attitudes towards Public and Private Healthcare System

Attitudes of the healthcare workers in both the private and public healthcare system on their views of the two systems of health were examined. When asked to determine if they liked private or public healthcare system of both, 51% responded public healthcare system, 30% responded private healthcare system and the remaining 11% responded both. This is shown in Figure 3.

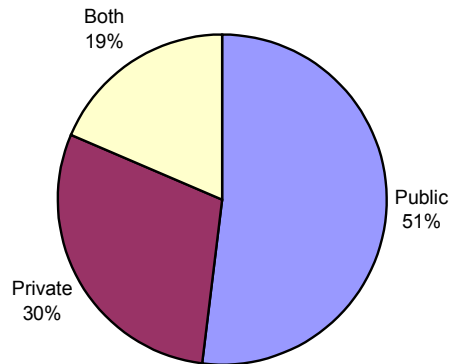


Figure 3: Preference for Public healthcare system, private healthcare system or both

4.11 Public Healthcare System

Advantages

Participants in both the private and public healthcare centers were asked what they liked about the public healthcare system. The most common answer was that the health centers were cheaper than the private clinics, so people who have less money were still able to access healthcare. Other common responses included having an official job title and not having to work in farm. In addition to being invited to free training and health education programs in the public health centers, workers at the public health centers believed that they were generally better educated compared to private clinic. One participant mentioned that he liked the public system because it is regulated by the government. Another participant mentioned that he enjoys using technologically advanced equipment such as x rays and ultrasounds, which are provided by the government.

Disadvantages

All participants were asked what they disliked about the public healthcare system. Firstly and the most common answer was their low salary. Many participants commented that they would work for longer hours if they had a higher salary. Participants also mentioned that the health centers and referral hospital in Kep are not equipped with enough resources to treat more serious illnesses, and they believed that some patients went straight to Kampot province for superior treatment. Although many participants mentioned the distance from the patients home and the health center as a major barrier and disadvantage, one participant also mentioned that he would like to be compensated for the travel costs to get to work. Some believed that the service at the health center has deteriorated because patients need to pay a registration fee before being seen by a health staff.

4.12 Private Healthcare System

Advantages

The major advantage of working in the private healthcare system is that they can make more money and that they are always available to their patients. They also do home visits, which helps if a patient is too ill to make his way to seek medical help. Some participants mentioned that they like the freedom over running their own business with no regulations, and they are able to spend more time with their family and farming.

Disadvantages

Some of the responses for disliking the private system included lacking the resources to cure serious illnesses and lacking the appropriate knowledge or expertise to carry out diagnoses and treatments; and as a result, they

may harm the patient. Some health staff claimed that private clinics may turn down people who are too poor to pay for treatment, and that the private clinics are only concerned about making money and charge large amounts of money. In addition, some were worried that they do not have medical records or legitimate certificates.

4.13 Improving healthcare system

The healthcare workers were asked how they would like to see the public healthcare system improved. Most of the responses involved increasing trained human resources, better medication, and newer equipment. Other comments were to provide electricity at health centers and higher salaries. They would also like get transportation compensation to go to work.

4.14 Focus Group

The following are answers that were provided by the public healthcare workers at 2 of the 4 public healthcare facilities.

1. What is the Ministry of Health (MoH) doing correctly in facilitating your treatment to your patients?

The MoH provides many components of the public healthcare system by providing buildings for healthcare workers to use, human resources to help the people of Kep, and materials for each healthcare worker to use. They also provide education and experience for healthcare workers, medication and vaccinations to give to patients, and salaries for healthcare workers. In addition, the MoH provides a per diem for vaccination and outreach clinics (8000 Riel/day). The MoH also has access to health promotion posters and health education materials. The MoH also has an incentive program in which healthcare staffs who work hard are given a motorcycle or a bicycle, which are used by the staff to go to outreach activities.

2. How can the health centers or referral hospitals improve without substantial increase in funding by the ministry of health?

Most participants wanted more free training courses such as midwifery or nursing classes. They also wanted to incorporate more NGO to support the health centers financially and with more human resources. For example, one participant mentioned that having a foreign doctor stay for 1-2 years training the healthcare workers would improve the skills of the local healthcare workers. Or another possible way that another participant mentioned was for healthcare workers to visit hospitals in other provinces to get more training. They would also like for the MoH to deliver medication on time, so that patients will be able to get the medication that they need.

3. What equipment/medications would you want with respect to limited funding by the ministry of health?

They would also prefer electricity for the health centers, new surgical equipment, new blood pressure cuffs, and autoclaves for the health center. Health centers have also suggested for newer deliver equipment since some of the current equipment has been lost or are old, and therefore they are not able to do many deliveries. They would also like a laboratory with more equipment and tests and more skillful lab technician.

4. What can you do to convince the government or a non-government organization to invest in public healthcare?

Since they would like to include dental services in the hospital, which would require a dentist, a dental room, and equipment, they would need to convince those in who are in power. They would want to express the need for dentistry services by letting the MoH know that patients who have dental problems in Kep are referred to another province since the Kep referral hospital is not able to accommodate their condition.

5. What do you think about a rule that states that both private and public healthcare providers need to be licensed?

The advantages would be that the private's would be regulated so it will be safer for the patients. However, the private's need to supervised with regular check ups because they may be regulated in providing one form of healthcare, such as diagnosing routine diseases, but may be treating for diseases that they are not qualified to do. In addition, if privates are regulated and make more money than the public healthcare workers, then the public workers will move into the private healthcare system.

5. Discussion

5.1 Training of Healthcare Workers

Although all healthcare workers received some form of formal training for their occupation either through schooling or experience, their educational programs were not structured like educational programs in developed countries. Currently, it is not apparent if there are specific requirements that must be achieved in order to attain a certificate or degree despite different colleges or schools. In order to make sure that the quality of care is sufficient, a licensing exam for each health occupation should be used to ensure that each healthcare worker is capable of performing their skills. This exam should be the same regardless of which school they attended.

Short educational courses were well received by the public health staff. However, those who work in the private clinics are not invited to these courses; and thus, they may not have knowledge on new treatments or how to deal with new forms of diseases and epidemics, like dengue or the bird flu. This may be a concern since some patients bypass the public healthcare system and only receive treatment from the private clinics, where clinicians may not have up-to-date knowledge.

5.2 Resources Available

Almost all practitioners had access to sphygmomanometer and stethoscopes. However, the major issue is the lack of electricity at health centers and at many private clinics. This limits not only the hours of operation, but also the type of equipment used and type of services available. It is difficult and perhaps dangerous, for example, to deliver a baby with dim lighting and a lack of electronic monitors of the baby's heart rate. Electricity was just brought to Kep's main road in June 2007, and further expansion may take some time. In addition, health centers and the referral hospital do not have designated phone numbers where patients can call; and therefore, it makes responding to medical emergencies difficult. The other issue is that transportation to the health centers and referral hospitals are often time consuming and expensive for patients. Thus, patients opt to go to the closer private clinics.

The main problem with resources including medicine and equipment is that there is a lack of money in the health sector. According to WHO, in 2005, only 6.8% of Cambodia's GDP was allocated to health expenditures, compared to 9.9% in Canada. This works out to be a total expenditure on health per capita at international dollar rate of \$153 in Cambodia, which was significantly less than Canada at \$3381. It is obvious that in order for the public health system to thrive, there needs to be more money put into the healthcare sector either through the government or through NGOs. Most of the healthcare professionals wanted greater NGO support financially to not only improve their deprived salaries, but also to get new and better equipment.

5.3 Health workers attitudes towards the private and public healthcare system

Most healthcare professionals prefer the public healthcare system to the private healthcare system. However, it is difficult for workers, especially those who work in both sectors, to justify not working in the private system since this is where they are able to make enough money to provide for themselves and their family. Since there is not a cap on how much private clinicians can charge for services, it is difficult to convince public healthcare workers to service only in the public healthcare system and for longer periods of time.

6. Recommendations

6.1 Hours of Operation

It is imperative for the residents of Kep to be able to access reliable public healthcare facilities. This means that several healthcare workers must be present during the designated hours of operation of the public health facility, which should at least run for 8 hours/day. However, it is hard for a public healthcare worker to sustain a reasonable income by staying at the public health facility for the whole day if the government is not paying a reasonable salary. There are several solutions that can be used in combination or in separation. Firstly, the healthcare workers can work in shifts rather than all of them working in the morning. Secondly, the government can pay them hourly wages, which will encourage them to work more hours. Thirdly, there needs to be a structure in place that can track the number of hours a healthcare worker works for. This can be done by using time logs where the director has to sign the healthcare worker in and out each day.

6.2 Transportation Service

In addition to the hours of operation issue, a transportation service to and from the public health facilities is also important. Since healthcare workers who worked in both the public and private clinics recommended patients to go to the clinic that is most convenient for them, which is often the private clinic, an ambulance or transportation service can eliminate distance to the public healthcare facility as a barrier to healthcare. This can be run with a moto-remorques for each public health facility that transports patients from the villages that are closest to each health facility. The costs for the driver, moto-remorque and gas can be covered by getting a foreign NGO to buy the moto-remorque, and the government paying for the driver and gas. Patients can also be given the choice to pay for the transportation service if possible. In addition, healthcare workers can also use the transportation service if getting to work is an issue.

6.3 Electricity

Another major issue is the problem of electricity. Electricity in Kep needs to be both reliable, with minimal electrical cut outs, and affordable. Having electricity available means that the public health centers can run during the evening hours as well as during the day. They will also be more capable of doing deliveries which require adequate lighting and use of equipment that requires electricity to operate. Since it may take a while for electricity to reach all parts of Kep, electricity can be powered by battery generators until electricity lines reach the area in which the health center is located.

7. Future Research

7.1 Education of Health Professionals

After the present study, it is unsure what the degree and certificate requirements are for different healthcare professionals, and whether or not these requirements are uniform across the country. It would also be interesting to know if their educational program includes clinical experience. This could be done by interviewing administrative staff at schools in Kampot and Phnom Penh, where most of the Kep clinicians went to school.

7.2 Kep Operational District (O.D)

In order for the public healthcare workers to be work together with the Kep Operational District, it is necessary to understand how the O.D. operates and how much money is allocated to healthcare. This can be done by interviewing O.D. staff to get their opinions on the importance of public healthcare, as well as administrative data on financial distribution within the Province.

8. Sources

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APPENDIX A: Worker Information

Subject #:

Village:

Date: ____ Year ____ Month ____ Day

Time: ____ am/pm

A. GENERAL INFORMATION of WORKER

A1. Sex _____

A2. Age _____

A3. Occupation title _____

B. TRAINING AND EXPERIENCE

B1. List the name of the institution and program, the level of training, length of program, and skills acquired for any **formal educational training** that you have received. Please include high school education. Indicate the mode of study: self-study (S) , adult college entrance exam (E), night school (N), correspondence school (CS) or centralized (C).

Name of Institution	Name of Program	Level of Training	Length of Program	Mode of Study	Skills Acquired

Note: Formal education means that a certificate/license has been issued.

B2. Describe any **informal educational training** that you have received in terms of its length, type of training, and skills acquired.

Type of Training	Length of Training	Skills Acquired

B3. List any **relevant experience** that you have in the healthcare field:

Type of Healthcare Facility/ Work	Duration	Skills Used

C. Private Vs. Public Healthcare

C1. Do you work in the public healthcare centers, private healthcare centers, or both?

C2. Fill in the following chart, if applicable.

	Public Healthcare Center	Private Healthcare Center
Duration spent at healthcare center per day		
Amount of money earned (salary)		
What do you like about this type of healthcare?		
What do you dislike about this type of healthcare?		

C3. What would you like to see in the Cambodian healthcare system?

C4. Do you want private or public healthcare system in Cambodia? And Why?

APPENDIX B: Healthcare Facility Information

D. GENERAL INFORMATION ABOUT HEALTHCARE FACILITY

- D1. What is this health center's average daily hours of operation? _____Hours
- D2. What are this health center's average weekly days of operation? _____Days
- D3. In 2006, aside from weekends or holidays, how many days was this hospital closed? _____ Days
- D4. What year was this health center established? _____Year
- D5. Does this health center keep patient medical records? 1 Yes 2 No
- D6. Health center services and standard fees. Please circle the number corresponding with your answer. If the service is free, please write "0".

Service	Is this service available?	Rial
1. Registration fee		
2. Health check-up examination	1 Yes 2 No	
3. Basic health exam (physical)	1 Yes 2 No	
4. Non-infectious TB treatment	1 Yes 2 No	
5. X-ray image fee	1 Yes 2 No	
6. X-ray fee	1 Yes 2 No	
7. Single-use needle syringe	1 Yes 2 No	
8. Ultrasound exam	1 Yes 2 No	
9. Injection fee	1 Yes 2 No	
10. Stitches for a wound	1 Yes 2 No	
11. Hospital bed fee	1 Yes 2 No	
12. Routine sputum test	1 Yes 2 No	
13. Routine blood test	1 Yes 2 No	
14. Routine urine test	1 Yes 2 No	
15. Routine stool test	1 Yes 2 No	
16. Liver function lab test	1 Yes 2 No	
17. Hepatitis B blood panel	1 Yes 2 No	
18. Electrocardiogram	1 Yes 2 No	
19. Realign and dress broken bones	1 Yes 2 No	
20. Oral rehydration salt (ORS) solution for diarrhea	1 Yes 2 No	
21. Direct observed therapy-short course (DOTS) for TB patients	1 Yes 2 No	

D. HEALTHCARE FACILITY EQUIPMENT STATUS

- D1. Does this health center have a freezer or refrigerator for storing vaccines? 1 Yes **【Cont.】** 2 No **【If no, jump to D4】**
- D2. Does this freezer have a thermometer inside for monitoring temperature?
1 Yes **【Cont.】** 2 No **【If no, jump to D4】**
- D3. What is the current temperature? _____degrees (C assumed)
- D4. Is there a toilet at this health center ? 1 Yes 2 No
- D5. This health center uses which of the following types of syringe for injections?
1 Glass syringe 2 Single-use syringe 3 Both
- D6. What are the most commonly used sterilization methods at this health center?
1 Boiled water 2 Electric sterilizer 3 Steam pressure 4 Autoclave 5 Chemical sterilization
6 Other (Please specify:_____)

D7. What is the sterilization time for the most commonly used type of sterilization? _____Minutes

D8. How many rooms does this health center have? _____Rooms

D9. Of which, how many are laboratories? _____Rooms

D10. Does this health center have running water (indoor)? 1 Yes 2 No

D11. What is this health center's water source?

- 1 Underground water (using a pump) 2 Open well (using a bucket) 3 Stream, river, lake 4 Rain water, snow
melt 5 Water processing facility 6 Other (Please specify: _____) 7 Don't
know

D12. Can patients call the hospital for services using a designated phone? 1 Yes 2 No

D13. Is there a covered area to protect patients waiting to be seen? 1 Yes 2 No

D14. Does this health center have a computer? 1 Yes 2 No

D15. This health center's medical equipment. If none, please fill in "0" in the "Unit" column.

Equipment	Unit(s)
1. 800MA X-ray machine and below	
2. ECG machine	
3. Ultrasound diagnostic machine	
4. High pressure sterilizer	
5. Examination table	
6. General operating table	
7. Examination lamp	
8. Stethoscope	
9. Otoscope	
10. Sphygmomanometer	
11. Scale	
12. Vision chart (backlit)	
13. C-arm X-ray unit	
14. Lung capacity machine	
15. Dental chair	
16. Operating kit	
17. Gastric lavage instrument	

APPENDIX C: Focus Group Questions

- a. What is the MoH doing correctly in facilitating you treating your patients?
- b. How can the health centers or referral hospitals improve without substantial increase in funding by the ministry of health?
- c. What equipment/medications would you want with respect to limited funding by the ministry of health?
- d. What is a reasonable salary to give to all staff?
- e. What can you do to convince the government or a non-government organization to invest in public healthcare?
- f. What do you think about a rule that states that both private and public healthcare providers need to be licensed?
- g. What are the disadvantages of a mixed healthcare system?

APPENDIX D: CONSENT FORM (Interview)

CONSENT TO PARTICIPATE

University of Toronto

Level of Training of Health Professionals and Resources Available in Kep's Health Facilities

Amy Pui Pui Ng, Dr. Zakus, Dr. Draisey

I understand that the project goals are to ascertain the level of training in Kep's health professionals and the resources available in Kep's health facilities.

It will take approximately 45 minutes to complete the survey. This survey contains information about my background level of training and the resources and services available at the healthcare facilities that I work for. If help is needed, a translator will read out the questions, which I will then answer and the investigator will write down my answers.

I understand that the investigator is a 1st year medical student at the University of Toronto, Canada. The interviewer/investigator has explained the project to me and has answered my questions about the project.

I understand that that notes will be made during the interview. I understand that all information derived from this study will be kept confidential. My name will not be associated with the information that I share in my interview.

I understand that I can refuse to answer any question during the course of the interview and may withdraw my consent at any time by verbal declaration without any prejudice to me, either now or in the future. I know that if I withdraw my consent, any data obtained will be destroyed.

I know that the members of the research team subscribe to the ethical conduct of research and to the protection, at all times, of the dignity, rights, interests, and safety of its participants. On completion of the research project, all original field data will be destroyed.

I know that any concerns or comments regarding my participation in this study can be addressed either directly to the interviewer, (*Amy Ng, amypp.ng@utoronto.ca*) or anonymously to (*provide local supervisor's/director's name, address, phone #, e-mail*). I will receive a copy of this form.

I have read and understood all of the above and I agree to participate in this study.

Name (Please Print)

Date

Signature

Witness

APPENDIX E: CONSENT FORM (Focus Groups)

CONSENT TO PARTICIPATE

University of Toronto

Level of Training of Health Professionals and Resources Available in Kep's Health Facilities

Amy Pui Pui Ng, Dr. Zakus, Dr. Draisey

I understand that the project goals are to ascertain the level of training in Kep's health professionals and the resources available in Kep's health facilities.

It will take approximately 2 hours. This focus group includes 6-9 other health professionals, a Canadian investigator, and a translator. Information that will be discussed will include information about the resources that health professions have, need, or want, as well as our opinions on Kep's healthcare system. No questions will be directed to me individually, but instead will be posed to the group. I may choose to respond or not respond at any point during the discussion. The focus group discussion may be audiotaped so we can capture comments in a transcript for analysis.

I understand that the investigator is a 1st year medical student at the University of Toronto, Canada. The interviewer/investigator has explained the project to me and has answered my questions about the project.

I understand that I can refuse to answer any question during the course of the focus group and may withdraw my consent at any time by verbal declaration without any prejudice to me, either now or in the future. I know that if I withdraw my consent, any data obtained will be destroyed.

We do not anticipate any risks or discomfort to you from being in this study. Even though we will emphasize to all participants that comments made during the focus group session should be kept confidential, it is possible that participants may repeat comments outside of the group at some time in the future. Therefore, we encourage you to be as honest and open as you can, but remain aware of our limits in protecting confidentiality.

I know that the members of the research team subscribe to the ethical conduct of research and to the protection, at all times, of the dignity, rights, interests, and safety of its participants. On completion of the research project, all original field data will be destroyed.

I know that any concerns or comments regarding my participation in this study can be addressed either directly to the interviewer, (Amy Ng, amypp.ng@utoronto.ca) or anonymously to (provide local supervisor's/director's name, address, phone #, e-mail). I will receive a copy of this form.

I have read and understood all of the above and I agree to participate in this study.

Name (Please Print)

Date

Signature

Witness

APPENDIX F: Confidentiality Form (Translators)

CONFIDENTIALITY

University of Toronto

Level of Training of Health Professionals and Resources Available in Kep's Health Facilities

Amy Pui Pui Ng, Dr. Zakus, Dr. Draisey

I, _____ (full name), understand that I will be translating information that is confidential in nature. I will ensure that I will not speak to anyone or keep any written or audiotape form of the material that I translate.

I have read and understood all of the above and I agree to participate in this study.

Name (Please Print)

Date

Signature

Witness